



MOLD SPORE TRAP REPORT

Nonviable Direct Microscopy

Prepared for

ABC Company

CLIENT PROJECT: House

CEI LAB CODE: X17-1213

TEST METHOD: CEI Method 110

RECEIVED DATE: 12/13/17

REPORT DATE:

A handwritten signature in black ink, appearing to read "Tianbao Bai".

Tianbao Bai, Ph.D., CIH
Laboratory Director

All samples received in acceptable condition. Analytical results are not corrected for field and laboratory blanks.

Test results relate only to the items tested and cannot be extrapolated to anything larger than their original intent. This report may not be reproduced, except in full, without written approval by CEI Labs, Inc (CEI). CEI bears no responsibility for client sampling methods and makes no warranty representation regarding the accuracy of client-supplied information in preparing and presenting analytical results. CEI maintains liability limited to the cost of analysis, except for CEI's own willful misconduct or gross negligence. Interpretation of the analytical results is the sole responsibility of the customer.

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MOLD SPORE TRAP REPORT: NONVIABLE DIRECT MICROSCOPY

CLIENT ABC Company
123 Maple Dr.
Anytown, USA 12345

CEI Lab Code: X17-1213
Date Received: 12-13-17
Date Analyzed: 12-13-17
Date Reported:

PROJECT: House

Client ID		1				2				3			
Lab ID		M01				M02				M03			
Location		Outside				Bedroom				Bathroom			
Volume (L)		75				75				75			
IDENTIFICATION		Raw Counts	% Analyzed	Spores per m ³	% of Total	Raw Counts	% Analyzed	Spores per m ³	% of Total	Raw Counts	% Analyzed	Spores per m ³	% of Total
Predominantly Outdoor	<i>Alternaria</i>												
	<i>Arthrinium</i>												
	Ascospores	5	100	67	1					4	100	53	6
	Basidiospores	267	100	3560	57								
	<i>Bipolaris/Drechslera</i>												
	<i>Cercospora</i>												
	<i>Curvularia</i>												
	<i>Epicoccum</i>												
	<i>Helicomyces*</i>												
	<i>Nigrospora</i>												
	<i>Oidium/Peronospora</i>												
	<i>Periconia/Smuts**</i>												
	<i>Pithomyces</i>												
	Rusts												
	<i>Spegazzinia</i>												
	<i>Stemphylium</i>												
	<i>Tetraploa</i>												
	<i>Torula</i>												
	Unspecified spores												
Indoor / Outdoor	<i>Aspergillus/Penicillium</i>					116	7	22095	98	57	100	760	80
	<i>Cladosporium</i>	198	100	2640	42	27	100	360	2	8	100	107	11
	<i>Fusarium</i>												
Water Indicator	<i>Chaetomium</i>									2	100	27	3
	<i>Stachybotrys</i>					4	100	53	<1				
	<i>Trichoderma</i>												
	<i>Ulocladium</i>												
Total		470		6300	100%	150		23000	100%	71		950	100%
Background Debris		2				3				2			
Pollen Count		2											
Mycelial Fragments						2				4			
Analytical Sensitivity (Spores/m ³)		13				13				13			

* *Helicomyces* includes *Helicosporium*; ** *Periconia/Smuts* includes *Myxomycetes*

Spores per m³ (final counts) reported to 2 significant figures

Spores of *Aspergillus*, *Penicillium*, and others are small with few distinguishing features and therefore can not be differentiated.

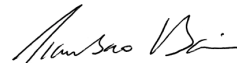
If % analyzed is <100%, spores per m³ is based on extrapolation and not actual count.

ANALYST:



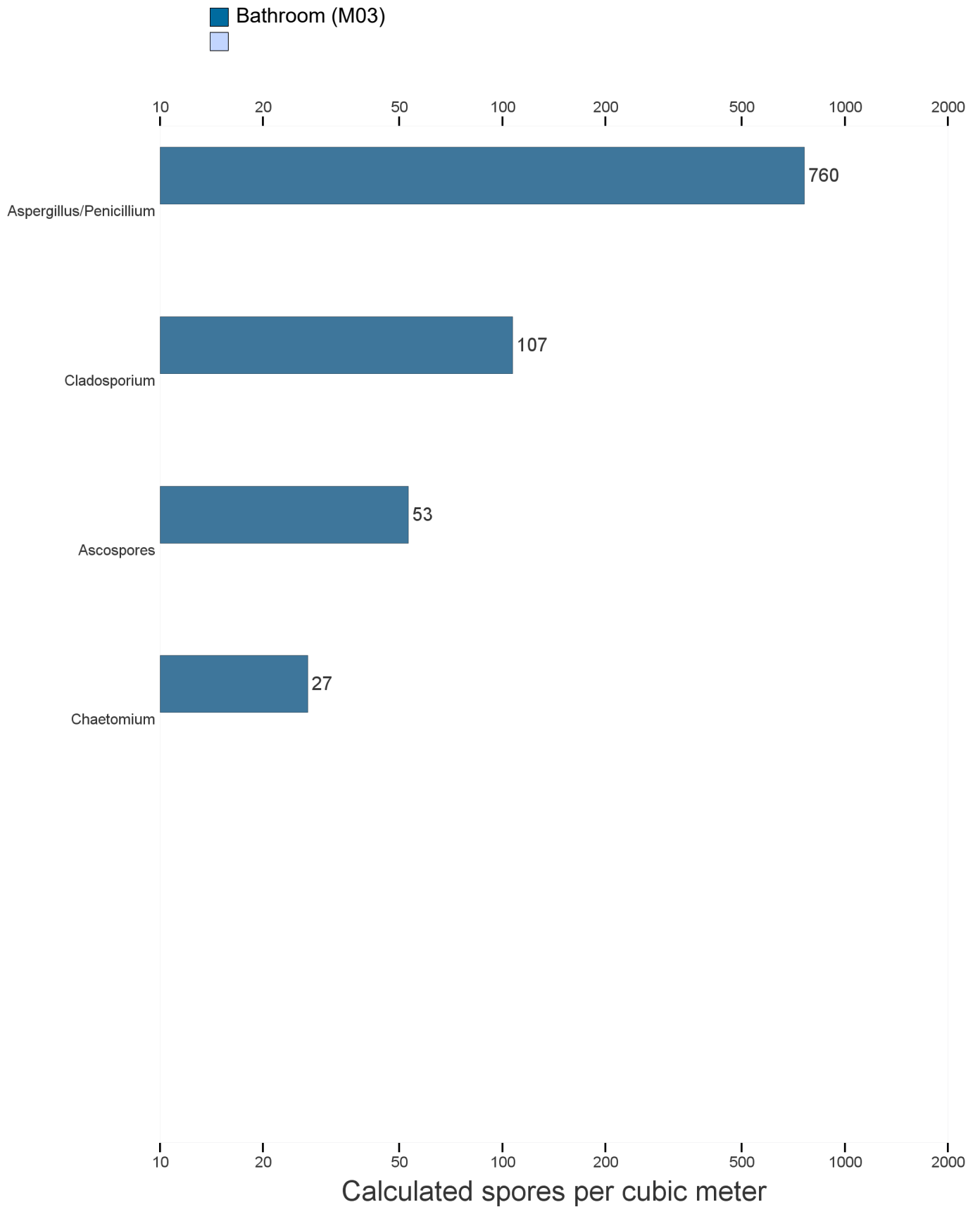
Marti Bowers

REVIEWED BY:



Tianbao Bai, Ph.D., Laboratory Director

CEI Lab Code: X17-1213



SPORE CLASSIFICATION:

For purposes of this report, identified mold spores are classified into three general categories depending on environmental conditions the spore is most commonly associated with:

- 1) **PREDOMINANTLY OUTDOOR:** Most commonly found growing outdoors and are not usually associated with indoor mold sources.
- 2) **INDOOR / OUTDOOR:** Commonly grow in both indoor and outdoor environments.
- 3) **WATER INDICATOR:** Most commonly associated with indoor mold growth in buildings with long-term water intrusion issues.

**PREDOMINANTLY
OUTDOOR**

INDOOR / OUTDOOR

**WATER
INDICATOR**

BACKGROUND DEBRIS:

Background debris is the amount of non-biological particulates present in the trace including dust, fibers, skin scales, dust mites, and insect parts. A debris rating is assigned each trace from 0 (lowest) to 5 (highest). A higher debris rating means samples are more difficult to analyze, and spores, especially smaller spores like *Aspergillus* / *Penicilium*, may be obscured. Counts with debris ratings of 4 or 5 should be regarded as minimal counts with actual counts assumed to be significantly higher. A further explanation of the debris rating is listed below:

- 0 - **None Detected.** No debris observed.
- 1 - **Trace.** Field of view obscured < 5%. Counts unaffected.
- 2 - **Light.** Field of view obscured 5% to 25%. Counts slightly affected.
- 3 - **Moderate.** Field of view obscured 25% to 75% . Actual counts may be higher than reported counts.
- 4- **Heavy.** Field of view obscured 75% to 90% . Actual counts may be significantly higher than reported counts.
- 5 - **Very Heavy.** Field of view obscured > 90% . Actual counts may be significantly higher than reported counts. Resampling may be necessary.

DEFINITION OF TERMS:

Analytical Sensitivity: Spore per cubic meter (concentration) divided by raw count.

Limit of Detection: One Spore

Mycelial Fragments: Mycelial fragments are broken pieces of fungal hyphae and constitute the vegetative structure of the fungus.

Pollen Count: Pollen grains (Pollen) are the male reproductive structures of Angiosperm plants. These are counted only as pollen and not classified to Genus level.

Raw Counts: The number of spores counted by the analyst.

% Analyzed: The amount of the trace that was analyzed for each individual spore type. If large amounts of any spore type(s) exist, counts may be extrapolated.

% of Total: Percentage of the sample that is made up of each spore type.

INDOOR AND OUTDOOR COMPARISONS:

There are no current Federal standards regarding permissible levels of airborne fungi that may be present in buildings. Mold spores are ubiquitous to our planet and it is expected that some spores will be present in normal indoor environments. A general guideline that is widely accepted in the industrial hygiene industry is that the types and numbers of mold spores present in the indoor environment should be similar to those present in the outdoor environment. If inside spore counts are significantly higher than outside counts this may indicate a potential mold problem. The comparison of outdoor and indoor spore types and concentrations is a useful tool in assessing abnormal mold contamination; however, it should not be the sole determining factor in evaluating health risks and remediation strategies.

	SPORE NAME	COMMON HABITAT	ALLERGENIC POTENTIAL	MYCOTOXIN POTENTIAL
Predominantly Outdoor	<i>Alternaria</i>	Soil, seeds, plants, carpet, textiles, window frames, air	X	X
	<i>Arthrinium</i>	Soil, plant materials, decaying wood	X	
	Ascospores	Plants, soil, cellulose-containing materials, air		
	Basidiospores	Soil, plants, wood, cellulose-containing materials, air		
	<i>Bipolaris/Drechslera</i>	Grasses, plant material, decaying food, soil		
	<i>Cercospora</i>	Plants		
	<i>Curvularia</i>	Soil, plant materials, cellulose-containing materials	X	
	<i>Epicoccum</i>	Plants, soil, seeds, carpet, air	X	
	<i>Helicomyces*</i>	Plants		
	<i>Nigrospora</i>	Plants, soil		
	<i>Oidium/Peronospora</i>	Plants		
	<i>Periconia/Smuts**</i>	Plants, air	X	
	<i>Pithomyces</i>	Soil, plant material, air		
	Rusts	Grasses, trees, other plants	X	
	<i>Spegazzinia</i>	Soil, plants		
	<i>Stemphylium</i>	Dead plants, cellulose-containing materials		
	<i>Tetraploa</i>	Plants		
	<i>Torula</i>	Soil, plants		
	Unspecified spores	Various		
	* <i>Helicomyces</i> includes <i>Helicosporium</i> ; * <i>Periconia/Smuts</i> includes <i>Myxomycetes</i>			
Indoor / Outdoor	<i>Aspergillus/Penicillium</i>	Soil, food, carpet, HVAC, air	X	X
	<i>Cladosporium</i>	Plants, woody plants, food, soil, paint, textiles, carpet, HVAC, air	X	
	<i>Fusarium</i>	Soil, plants, seed, fruits, grains		X
Water Indicator	<i>Chaetomium</i>	Cellulose-containing materials, soil, seeds, dung	X	X
	<i>Stachybotrys</i>	Paper, wallpaper, gypsum board	X	X
	<i>Trichoderma</i>	Soil, decaying wood, plant material, cellulose-containing materials	X	X
	<i>Ulocladium</i>	Soil, grasses, wood, paper		